

## SEQUENCE LISTING

## Sequence Listing

<110> Nara Institute of Science, Technology, Research Institute of Innovative Technology for the Earth and Kinki University

<120> Transgenic plants

<130> C01F1576

<160> 17

<210> 1

<211> 358

<212> PRT

<213> Spinacia oleracea L

<220> Fructose-1,6-bisphosphatase

<223>

<400> 1

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20								25						30	
Ala	Gly	Val	Ile	Asp	Ala	Glu	Leu	Thr	Ile	Val	Leu	Ser	Ser	Ile	Ser
35							40					45			
Leu	Ala	Cys	Lys	Gln	Ile	Ala	Ser	Leu	Val	Gln	Arg	Ala	Gly	Ile	Ser
50				55						60					
Asn	Leu	Thr	Gly	Ile	Gln	Gly	Ala	Val	Asn	Ile	Gln	Gly	Glu	Asp	Gln
65				70					75					80	
Lys	Lys	Leu	Asp	Val	Val	Ser	Asn	Glu	Val	Phe	Ser	Ser	Cys	Leu	Arg
85							90					95			
Ser	Ser	Gly	Arg	Thr	Gly	Ile	Ile	Ala	Ser	Glu	Glu	Glu	Asp	Val	Pro
100							105				110				
Val	Ala	Val	Glu	Glu	Ser	Tyr	Ser	Gly	Asn	Tyr	Ile	Val	Val	Phe	Asp
115							120				125				
Pro	Leu	Asp	Gly	Ser	Ser	Asn	Ile	Asp	Ala	Ala	Val	Ser	Thr	Gly	Ser
130							135				140				
Ile	Phe	Gly	Ile	Tyr	Ser	Pro	Asn	Asp	Glu	Cys	Ile	Val	Asp	Ser	Asp
145							150			155			160		
His	Asp	Asp	Glu	Ser	Gln	Leu	Ser	Ala	Glu	Glu	Gln	Arg	Cys	Val	Val
165							170				175				
Asn	Val	Cys	Gln	Pro	Gly	Asp	Asn	Leu	Leu	Ala	Ala	Gly	Tyr	Cys	Met
180							185				190				
Tyr	Ser	Ser	Ser	Val	Ile	Phe	Val	Leu	Thr	Ile	Gly	Lys	Gly	Val	Tyr

195	200	205
Ala Phe Thr Leu Asp Pro Met Tyr Gly Glu Phe Val	Leu Thr Ser Glu	
210	225	220
Lys Ile Gln Ile Pro Lys Ala Gly Lys Ile Tyr Ser	Phe Asn Glu Gly	
225	230	235
Asn Tyr Lys Met Trp Asp Asp Lys Leu Lys Tyr	Met Asp Asp Leu	
245	250	255
Lys Glu Pro Gly Glu Ser Gln Lys Pro Tyr Ser Ser	Arg Tyr Ile Gly	
260	265	270
Ser Leu Val Gly Asp Phe His Arg Thr Leu Leu Tyr	Gly Gly Ile Tyr	
275	280	285
Gly Tyr Pro Arg Asp Ala Lys Ser Lys Asn Gly Lys	Leu Arg Leu Leu	
290	295	300
Tyr Glu Cys Ala Pro Met Ser Phe Ile Val Glu Gln	Ala Gly Gly Lys	
305	310	315
Gly Ser Asp Gly His Gln Arg Ile Leu Asp Ile Gln	Pro Thr Glu Ile	
325	330	335
His Gln Arg Val Pro Leu Tyr Ile Gly Ser Val Glu	Glu Val Glu Lys	
340	345	350
Leu Glu Lys Tyr Leu Ala		
355		

&lt;210&gt; 2

&lt;211&gt; 1074

&lt;212&gt; DNA

&lt;213&gt; Spinacia oleracea L

&lt;220&gt; Fructose-1,6-bisphosphatase

&lt;223&gt;

&lt;400&gt; 2

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accatcgltc ttcttagcat ttcatggct tgtaaacaat ttgccttcctt ggttcaacga	180
gctggattt ctaacttgac tggaaatcaa ggtgctgtca atatccaagg agaggatcag	240
aagaaaacttg atgttgtctc caatgagggtg tttcgagct gctttagatc gagttggaga	300
acaggaataa tagcatcaga agaagaggat gtaccagtgg cagtggaga gagttactct	360
ggaaaactata ttgttgttt tgatccactt gatggttcat ccaacattga tgcagctgtc	420
tccactggtt ccatcttgg catttatagc cctaaccatg agtgcattgt tgactctgtat	480
cacgacgtg agtcacagct aagtgcagaa gaacagagggt gtgtatgtcaa tgtatgtcaa	540
ccagggata acctattagc agcagggtat tgtatgtact caagctctgt tatcttcgtat	600
cttacaatgt gtaaagggtgt gtatgcattc acatttagatc caatgtatgg tgaattcgta	660
ctcacttcag agaaaatcca aatccccaaa gctggagaaga tctattcatt caatgaaggt	720

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ggttctgtatg	gtcatcaaag	aattcttgac	attcaaccca	ccgagataca	tcaacgtgtg	1020										
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<211> 333																
<212> PRT																
<213> Spinacia oleracea L																
<220> Sedoheptulose-1, 7-bisphosphatase																
<223>																
<400> 3																
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20									25						30	
Ile	Arg	Leu	Met	Met	Cys	Met	Gly	Glu	Ala	Leu	Arg	Thr	Ile	Gly	Phe	
35									40						45	
Lys	Val	Arg	Thr	Ala	Ser	Cys	Gly	Gly	Thr	Gln	Cys	Val	Asn	Thr	Phe	
50									55						60	
Gly	Asp	Glu	Gln	Leu	Ala	Ile	Asp	Val	Leu	Ala	Asp	Lys	Leu	Leu	Phe	
65									70						80	
Glu	Ala	Leu	Asn	Tyr	Ser	His	Phe	Cys	Lys	Tyr	Ala	Cys	Ser	Glu	Glu	
85									90						95	
Leu	Pro	Glu	Leu	Gln	Asp	Met	Gly	Gly	Pro	Val	Asp	Gly	Gly	Phe	Ser	
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Val	Ala	Phe	Asp	Pro	Leu	Asp	Gly	Ser	Ser	Ile	Val	Asp	Thr	Asn	Phe	
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Ser	Val	Gly	Thr	Ile	Phe	Gly	Val	Trp	Pro	Gly	Asp	Lys	Leu	Thr	Gly	
130									135						140	
Val	Thr	Gly	Arg	Asp	Gln	Val	Ala	Ala	Ala	Met	Gly	Ile	Tyr	Gly	Pro	
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Arg	Thr	Thr	Tyr	Val	Leu	Ala	Leu	Lys	Asp	Tyr	Pro	Gly	Thr	His	Glu	
165									170						175	
Phe	Leu	Leu	Leu	Asp	Glu	Gly	Lys	Trp	Gln	His	Val	Lys	Glu	Thr	Thr	
180									185						190	
Glu	Ile	Asn	Glu	Gly	Lys	Leu	Phe	Cys	Pro	Gly	Asn	Leu	Arg	Ala	Thr	
195									200						205	
Ser	Asp	Asn	Ala	Asp	Tyr	Ala	Lys	Leu	Ile	Gln	Tyr	Tyr	Ile	Lys	Glu	

210	215	220													
Lys	Tyr	Thr	Leu	Arg	Tyr	Thr	Gly	Gly	Met	Val	Pro	Asp	Val	Asn	Gln
225			230			235			240						
Ile	Ile	Val	Lys	Glu	Lys	Gly	Ile	Phe	Thr	Asn	Val	Ile	Ser	Pro	Thr
							245		250		255				
Ala	Lys	Ala	Lys	Leu	Arg	Leu	Leu	Phe	Glu	Val	Ala	Pro	Leu	Gly	Phe
							260		265		270				
Leu	Ile	Glu	Lys	Ala	Gly	Gly	His	Ser	Ser	Glu	Gly	Thr	Lys	Ser	Val
							275		280		285				
Leu	Asp	Ile	Glu	Val	Lys	Asn	Leu	Asp	Asp	Arg	Thr	Gln	Val	Ala	Tyr
							290		295		300				
Gly	Ser	Leu	Asn	Glu	Ile	Ile	Arg	Phe	Glu	Lys	Thr	Leu	Tyr	Gly	Ser
							305		310		315		320		
Ser	Arg	Leu	Glu	Glu	Pro	Val	Pro	Val	Gly	Ala	Ala	Ala			
							325		330						

&lt;210&gt; 4

&lt;211&gt; 999

&lt;212&gt; DNA

&lt;213&gt; Spinacia oleracea L

&lt;220&gt; Sedoheptulose-1,7-bisphosphatase

&lt;223&gt;

&lt;400&gt; 4

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gaagcattaa ggaccattgg cttaaagtg aggactgttt catgtgggg aactcaatgt		180
gttaacacct ttggagacga acagcttgcc attgtatgtgc ttgctgacaa gcttctttc		240
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caagatatgg gaggccccgt tggatggcgaa ttcatgttagt catttgcacc ccttgcgtt		360
tccagcatgt tcgataccaa ttcttcgtt gggaccatat tcgggtttt gcccgggttac		420
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tatataaaag agaaatacac attgttgcattt actggaggaa tggttcctgtt tgtttaccat		660
atcatatgttga aggagaaagg tatattcaca aatgttgcattt cacctacagg caaggcaaa		720
tttgggttac tggtttgggtt agtccctcta gggttcttgc ttgttgcaggc tgggtggcac		780
accgttgggg gaaccaagtc tgggttggac attgttgcattt aaaaccccttga tgacagaacc		840
caagtgttgc acggcttcattt gaacggatgc atccgttgc agaagacact atacggatcc		900
tcttggcttgc agggccatgttcc tccctgttggta gctgttgcattt		960
<210> 5		999

<211> 356

<212> PRT

<213> Synechococcus

<220> fructose-1,6-bisphosphatase/sedoheptulose-1,7-bisphosphatase from Synechococcus PCC 7942

<223>

<400> 5

Met Glu Lys Thr Ile Gly Leu Glu Ile Ile Glu Val Val Glu Gln Ala  
5 10 15  
Ala Ile Ala Ser Ala Arg Leu Met Gly Lys Gly Glu Lys Asn Glu Ala  
20 25 30  
Asp Arg Val Ala Val Glu Ala Met Arg Val Arg Met Asn Gln Val Glu  
35 40 45  
Met Leu Gly Arg Ile Val Ile Gly Glu Gly Glu Arg Asp Glu Ala Pro  
50 55 60  
Met Leu Tyr Ile Gly Glu Glu Val Gly Ile Tyr Arg Asp Ala Asp Lys  
65 70 75 80  
Arg Ala Gly Val Pro Ala Gly Lys Leu Val Glu Ile Asp Ile Ala Val  
85 90 95  
Asp Pro Cys Glu Gly Thr Asn Leu Cys Ala Tyr Gly Gln Pro Gly Ser  
100 105 110  
Met Ala Val Leu Ala Ile Ser Glu Lys Gly Gly Leu Phe Ala Ala Pro  
115 120 125  
Asp Phe Tyr Met Lys Lys Leu Ala Ala Pro Pro Ala Ala Lys Gly Lys  
130 135 140  
Glu Thr Ser Ile Lys Ser Ala Thr Glu Asn Leu Lys Ile Leu Ser Glu  
145 150 155 160  
Cys Leu Asp Arg Ala Ile Asp Glu Leu Val Val Val Val Met Asp Arg  
165 170 175  
Pro Arg His Lys Glu Leu Ile Gln Glu Ile Arg Gln Ala Gly Ala Arg  
180 185 190  
Val Arg Leu Ile Ser Asp Gly Asp Val Ser Ala Ala Ile Ser Cys Gly  
195 200 205  
Phe Ala Gly Thr Asn Thr His Ala Leu Met Gly Ile Gly Ala Ala Pro  
210 215 220  
Glu Gly Val Ile Ser Ala Ala Ala Met Arg Cys Leu Gly Gly His Phe  
225 230 235 240  
Gln Gly Gln Leu Ile Tyr Asp Pro Glu Val Val Lys Thr Gly Leu Ile  
245 250 255  
Gly Glu Ser Arg Glu Ser Asn Ile Ala Arg Leu Gln Glu Met Gly Ile

260	265	270
Thr Asp Pro Asp Arg Val Tyr Asp Ala Asn Glu Leu Ala Ser Gly Gln		
275	280	285
Glu Val Leu Phe Ala Ala Cys Gly Ile Thr Pro Gly Leu Leu Met Glu		
290	295	300
Gly Val Arg Phe Phe Lys Gly Gly Ala Arg Thr Gln Ser Leu Val Ile		
305	310	315
Ser Ser Gln Ser Arg Thr Ala Arg Phe Val Asp Thr Val His Met Phe		
325	330	335
Asp Asp Val Lys Thr Val Ser Leu Pro Leu Ile Pro Asp Pro Lys Trp		
340	345	350
Arg Pro Glu Arg		
355		

&lt;210&gt; 6

&lt;211&gt; 1350

&lt;212&gt; DNA

&lt;213&gt; Synechococcus

&lt;220&gt; fructose-1,6-bisphosphatase/sedoheptulose-1,7-bisphosphatase from Synechococcus PCC. 7942

&lt;400&gt; 6

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cggatttatt gaagtgtcg agcaggcagc gatcgccctcg gcccgcctga tgggcaaagg	180
cggaaaagaat gaagccgatc gcgtcgcagt agaagcgatg cgggtgcgga tgaaccaagt	240
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caagctggtg gaaatcgaca tcgcccgttg cccctgcgaa ggcaccaacc tctgcgccta	420
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<213> Nicotiana tabacum	
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ttaaataaac caa	133
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<213> Nicotiana tabacum	
<223> rps16 terminator	
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